



DEPARTMENT OF THE AIR FORCE  
AIR FORCE RESEARCH LABORATORY  
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

AFI91-202\_AFRLGM2016-01  
20 September 2016

MEMORANDUM FOR SEE DISTRIBUTION

FROM: AFRL/CC  
1864 Fourth Street  
Wright-Patterson AFB OH 45433-7130

SUBJECT: (AFRL) Guidance Memorandum (GM) to Air Force Instruction (AFI) 91-202,  
AFRL Supplement 1, *The US Air Force Mishap Prevention Program*

1. By order of the Commander, this AFRL GM immediately implements changes to AFI 91-202, AFRL Supplement 1. This GM updates this instruction to the most current AFI 91-202, dated 24 June 2015 and AFI 91-202, AFMCSUP, 9 July 2013 guidance. Compliance with this memorandum is mandatory. There are no releasability restrictions on this GM. To the extent its directions are inconsistent with other Air Force Research Laboratory (AFRL) instructions, the information herein prevails in accordance with (IAW) AFI 33-360, *Publications and Forms Management*. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).
2. In advance of a rewrite of AFI 91-202, AFRL Supplement 1, the attachment to this memorandum is updated to provide guidance changes that are effective immediately.
3. This memorandum becomes void after one year has elapsed from the date of this Memorandum or the rewrite of AFI 91-202 AFRL Supplement 1, whichever is earlier.

ROBERT D. McMURRY  
Major General, USAF  
Commander

Attachment:  
Guidance Changes

DISTRIBUTION:

711 HPW/HP/RH

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## **Attachment**

### ***Guidance Changes***

The below changes to AFI 91-202, AFRL Supplement 1, dated 12 December 2011, are effective immediately. “New” means guidance in this paragraph is newly introduced through this GM to supplement the current AFI or AFMC supplement (not in AFRL Sup 1). “Chg” means the guidance in this paragraph has changed from AFRL Sup 1, but the paragraph number stayed the same. When “chg to” between two paragraphs numbers is used, the first paragraph number is from AFRL Sup 1. The second number is what it has been changed to, to align with the current AFI or AFMC supplement. “Unchanged” means the paragraph in AFRL Sup 1 has not been changed in any way and still applies.

When “(Added)” follows the paragraph number, the paragraph was added to AFI guidance. When “(Added\*)” is used, the paragraph was added to AFMC guidance. When a “(\*)” is used, the paragraph supplements AFMC guidance. When none of the above listed identifiers are present, the paragraph supplements AFI guidance.

This is an inclusive list of all paragraphs that are contained in AFRL Supplement 1.

#### **1.1. Deleted**

#### **1.1.5. Deleted**

#### **1.1.6. Deleted**

**1.4.1.4.1.1. (New)** AFRL/CC directs that all AFRL organizations will implement and maintain an active and basic Air Force Safety Management System (AFSMS) as established and mandated in AFI 91-202, *Mishap Prevention Program*. AFRL units may choose to pursue or use other non-Air Force systems (e.g. Voluntary Protection Programs (VPP), American National standards Institute (ANSI) etc.) but when they do, these Safety Management Systems (SMS) are only recognized as supplemental to the basic AFSMS requirements and may require additional individual unit effort to implement, document/report, and maintain.

#### **1.4.3.2. Deleted**

#### **1.5. Deleted**

**1.5.20.1.1. (New) (\*)** AFRL branch chiefs are equivalent to squadron commanders for the purposes of assigning primary and alternate Additional Duty Weapons Safety Representatives (ADWSRs).

**1.6. (New)** AFRL Det/Site SE offices will ensure support agreements are accurate and coordinate updates to AFRL/SE regarding changes in support requirements.

#### **1.6.11. Deleted**

**1.6.11.7.** Deleted

**1.6.13. chg to 1.8.21.** AFRL directors, detachment commanders, and section/branch/division chiefs:

**1.6.13.1.** Deleted

**1.6.16.** Deleted

**1.6.16.5.** Deleted

**1.6.16.6.** Deleted

**1.6.16.11.** Deleted

**1.6.16.14.** Deleted

**1.6.16.15.** Deleted

**1.6.16.16.** Deleted

**1.6.16.17.** Deleted

**1.8.11.10. (New)** AFRL/PK is the office of responsibility to ensure AFRL contracts include all appropriate safety clauses. A defined Contract Safety Review Process is posted for AFRL unit use at:

<https://cs2.eis.afmc.af.mil/sites/1547/Safe/Ground/Forms/AllItems.aspx?RootFolder=%2fsites%2f1547%2fSafe%2fGround%2f5%2e%20%20AFRL%20Contracting%20Guidance&FolderCTID=0x012000977E2052EB1B8640B50EB9D626F5A708&View=%7bAD864BE4%2d5ACC%2d4104%2d9FDA%2dA37A10CC0EE5%7d>

**1.8.21.15. (New)** Every AFRL Technology Directorates (TDs) is considered a wing equivalent within the aspects of using, documenting, or requiring an AFSMS and they will ensure an annual documented SMS review as outlined in AFI 91-202; Attachment 17 is performed by their assigned or matrixed safety staff, reviewed/accepted by TD leadership, and then provided to AFRL/SE for consolidation NLT 1 Nov of each calendar year.

**1.8.22.20. (New) (Added)** Ensure subordinates contact their local AFRL Safety Office at the very beginning of an activity and when any change is required during an activity (all flight or non-flight activities include: research, development, experimentation, demonstration, military exercise, training, competition, and test efforts including Small Business Innovative Research (SBIR) contracts, in-house and contracted activities) to ensure safety requirements are identified and efficiently integrated into execution. Use AFRL Form 4, *Initial Safety Assessment*, prior to activity approval to ensure involvement of safety and to communicate projected risk to AFRL leadership.

**2.1. (Chg\*) AFRL Safety Staff.** The standard AFRL Safety organizational structure consists of a single headquarters office, AFRL/SE, led by a Chief of Safety (COS) reporting directly to the AFRL Commander and Det/Site SE offices, each led by a COS reporting directly to the Detachment Commander, TD Director, or Wing Commander. The AFRL/SE office will have personnel authorizations to cover the COS and core disciplines as applicable to mission: i.e. Occupational Safety (SEG), Flight Safety (SEF), Weapons Safety (SEW) and System Safety (SES). AFRL/SE will provide oversight of mission safety needs for its TDs/711 HPW. Det/Site SE will leverage safety support from the installation program wherever possible. AFRL Det/Site SE will be located at all AFRL Detachments and installations where TDs reside. AFRL Det/Site SE offices will be the single interface to installation/host safety offices. Each Det/Site SE office is the OPR for the safety portion of their installation support agreement to include their geographically separated sites. AFRL Det/Site SE offices will support the installation programs and provide unique mission safety requirements to the TDs and 711 HPW (those requirements not available from the installation). Det/Site SE staffs will be tailored to meet the TDs' and 711 HPW mission and operating environments IAW 91-series AFIs, Air Force Material Command (AFMC), and AFRL supplements.

**2.1.1. (Chg\*) COS.** All personnel whom are appointed as a Det/Site COS must have a minimum of five years experience either as a civilian job series (0803) Systems Safety Engineer or (0018) Occupational Safety Manager, as this experience and knowledge are critical in order to understand and effectively have oversight of, and to run a safety office at an AFRL Directorate level. Det Commanders can request a waivers or deviations for this requirement; which will be staffed for AFRL/SE recommendation prior to decision to accept or deny the waiver/exemption by AFRL/CV.

**2.1.1.1. Deleted**

**2.1.2.4. (New)** AFRL COS and Leads for safety offices are responsible to plan, budget, and track all foreseeable training needs during annual training forecasts for their Det/Site or TD. They will also ensure all employees meet AF and AFMC training requirements.

**2.1.7.2. (New) (Added\*)** AFRL Det/Site SE Safety Engineer personnel will be in the Engineering career series, DR-08XX-2, or military 62EXX, O-3/4 level. Safety engineers should be minimally designated as Acquisition Professional Development Program (APDP) Systems Planning, Research, Development, and Engineering Science and Technology Manager (SPRD&E-STM) Level II.

**2.1.7.2.1. (New) (Added\*)** Every AFRL organization must ensure that a System Safety Manager (SSM) is assigned responsibility for the activities of the organization and be assigned to an SE office.

**2.2.1. Deleted**

**2.2.2. Deleted**

**2.3. Deleted**

**2.3.4.1.** Deleted

**2.3.4.2.** Deleted

**2.3.7.** Deleted

**2.3.8.** Deleted

**2.4.** Deleted

**2.4.3.** Deleted

**2.7.1.** Deleted

**2.9.** Deleted

**3.1.** Deleted

**3.1.2.** Deleted

**3.1.4.3.** Deleted

**3.1.4.4.** Deleted

**3.1.4.5.** Deleted

**3.2.** Deleted

**3.3.** Deleted

**3.4. (New)** AFRL Det/Site SE offices will assess the safety program of each Division and Stand-alone Branch of any TD whom they are matrixed or assigned to every 24 months as a minimum.

**Exception:** Subordinate Divisions or Stand-alone Branches of a TD which are Geographically Separated Unit (GSUs) or Operating Locations (OLs) can have an on-site assessment accomplished at intervals not to exceed 36 months.

**3.4.6. (New)** Commanders, Directors, Division and Branch Chiefs within AFRL are the Office of Primary Responsibility (OPRs) responsible to run and validate several (Det/TD) safety-related Management Internal Control Toolset (MICT) Self-Assessment Communicators (SACs) as they are a distinct and separate process from safety inspections/assessments. Safety staff (assigned or matrixed to AFRL units) can assist the above OPRs as an SME within a unit's Commanders Inspection Program (CCIP), but will never be assigned or detailed as the direct OPR to run or validate any CC below installation level, installation CC, Unit Safety Representative (USR), or supervisor-related SAC.

**3.5.2.1. (New) (\*)** Squadron commander equivalent, Branch Chiefs will designate operational area and frequency of spot inspection for ADWSRs.

**3.6.** Deleted

**3.6.1. (New)** AFRL Det/Site SE staff will conduct and document Annual Safety Inspections for each TD they provide safety services for and will provide copies of these reviews to HQ AFRL/SE on a yearly basis. Provide inspection reports for GSUs or OLs whether performed by Det/Site SE or host.

**3.7.1.1.** Deleted

**4.3.2. (New)** AFRL Det/Site SE staff will also provide AFRL/SEG copies of any AF Form 457, *USAF Hazard Report*, initiated or forwarded to their host installation safety office.

**4.3.4.4. (New)** AFRL Det/Site SE staff will inform AFRL/SEG about corrective actions and conduct follow-up reviews until the action is completed. They will then inform AFRL/SEG of any completed actions within ten workdays after the report is closed.

**4.4.3.** Deleted

**4.5.** Deleted

**5.1.1.** Deleted

**5.5.4.** Deleted

**6.3.** Deleted

**7.1.1.2.** Deleted

**7.1.1.2.1.** Deleted

**7.6.** Deleted

**8.4.1.** Deleted

**9.1. chg to 11.1.** AFRL System Safety Overview. In this instruction, the term “activities” will include all research, development, experimentation, demonstration, military exercise, training, competition, and test efforts, including SBIR contracts, in-house and contracted activities. It applies to all AFRL activities involving AFRL assets (full or partial ownership) or AFRL personnel (civilian or military) where AFRL has mishap investigation responsibility. All activities will follow the top-level process of planning, technical review, safety review, approval, execution, lessons learned, and documentation, as applicable. Detailed guidance is available in **Chapter 13, *Test Safety Review Process***, of this publication. Scientists, engineers, and Program

Managers (PMs) will integrate system safety and risk management principles into all AFRL activities.

**9.2.2. chg to 11.1.1.2. (\*)** AFRL Det/Site SE will have trained SSM(s)/engineers(s) to implement the system safety program and provide technical assistance to scientists, engineers, and PMs in support of system safety integration in all activities.

**9.3.5. chg to 11.2.9. (Added)** The AFRL Det/Site SSM(s) are the focal point for the System Safety Program. These individuals have the overall responsibility of integrating a System Safety Program within each TD based upon current DoD, *Standard Practice for System Safety* (MIL-STD-882), Air Force, AFMC, and AFRL guidance. AFRL Det/Site SSM(s) will assist with applicable system safety support on all activities and:

**9.3.5.1.** Deleted

**9.3.5.1.1. chg to 11.2.9.1. (Added)**

**9.3.5.1.2.** Deleted

**9.3.5.1.3.** Deleted

**9.3.5.1.4. chg to 11.2.9.3. (Added)**

**9.3.5.1.5. chg to 11.2.9.4. (Added)** Provide assistance to scientists, engineers, and PMs completing AFRL Form 4.

**9.3.5.1.6. chg to 11.2.9.5. (Added)**

**9.3.5.1.7. chg to 11.2.9.6. (Added)**

**9.3.5.1.8. chg to 11.2.9.7. (Added)**

**9.3.5.1.9. chg to 11.2.9.8. (Added)**

**9.3.8.** Deleted

**9.3.8.1.** Deleted

**9.3.9.** Deleted

**9.3.9.1.** Deleted

**9.3.9.2.** Deleted

**9.3.10.** Deleted



**9.3.10.1.** Deleted

**9.3.10.2.** Deleted

**9.3.11.** Deleted

**9.3.11.1.** Deleted

**9.3.11.2.** Deleted

**9.3.12.** Deleted

**9.3.12.1.** Deleted

**9.3.12.2.** Deleted

**9.5.2.1. (New) (\*)** At AFRL GSUs where there is no host Weapons Safety Manager (WSM), the responsible COS will act as the Installation WSM for determining explosive license requirements at their respective locations. The AFRL/SEW will provide training as required/requested.

**9.6.2.6.** Deleted

**10.1.2.** Deleted

**10.7. (New) (\*)** The AFRL SSO is the representative to the Space Safety Council (SSC).

**11.1.1.3. (New) (Added\*)** AFRL does not manage acquisition systems and is therefore exempt from many of the specific requirements of this chapter. However, the fundamental practices of system safety, as outlined in AFI 91-202, paragraphs 11.1.2. and 11.1.3. are required for all AFRL activities.

**11.1.2. chg to 10.1.** AFRL Det 8 SE office will have one system safety personnel authorization dedicated to Space Safety. This SSM will act as the AFRL Space Safety Officer (SSO) and serve as AFRL's focal point and primary advisor to the AFRL/CC on all space safety issues. AFRL/SE will maintain oversight of the space safety program.

**11.2.9.2. (New) (Added)** Coordinate with TD/Wing Test & Evaluation Leads as required per AFRLI 61-103, *AFRL Research Test Management* and AFRLI 99-103, *AFRL Flight Test and Evaluation* for flight activities.

**11.2.9.9. (New) (Added)** Document safety analysis and approval using an AFRL safety risk acceptance tool (e.g. AFRL Form 5, *AFRL Safety Permit* or AFRL Form 19A, *Safety Review Board*).

**12.1.** Deleted

**12.2. Deleted**

**12.5. Deleted**

**13.1.1. (Chg\*) (\*)** In this instruction the term “activities” will include all research, development, experimentation, demonstration, military exercise, training, competition, and test efforts, including SBIR contracts, in-house and contracted activities. It applies to all AFRL activities involving AFRL assets (full or partial ownership) or AFRL personnel (civilian or military) where AFRL has mishap investigation responsibility. All activities will follow the top-level process of planning, technical review, safety review, approval, execution, lessons learned, and documentation, as applicable. AFRLI 61-103 additionally for flight activities AFRL Manual 99-103 provide guidance for the conduct of AFRL activities.

**13.1.2. Unchanged**

**13.1.3. Unchanged**

**13.2.1. (Chg\*) (\*)** All AFRL activities will follow the safety review process defined in this chapter. To eliminate duplication of effort, see paragraph **13.6.1.**, regarding safety reviews conducted by other organizations. Test Approval Authority (TAA) is used throughout the AFRL supplement and is equivalent to Test Execution Authority (TEA).

**13.2.2. (New) (\*)** Ensure an independent airworthiness assessment is complete prior to, and included as part of, the Safety Review Board (SRB) for flight activities. The Memorandum for Record (MFR) is not required to be signed prior to the SRB.

**13.2.4. (New) (\*)** TDs will submit local procedures to HQ AFRL/SE for approval.

**13.3.2. (New) (\*)** AFRL/DO will:

**13.3.3.3. (New) (\*)** Detachment Commanders coordinate with the Installation Safety Office for review prior to resumption of testing after mishap/incident or test plan revisions

**13.3.4. Deleted**

**13.3.5.9. chg to 13.3.1. (\*)**

**13.3.5.9.1. chg to 13.3.1.3. (\*)** Act as final approval authority for SRB chairperson candidates who are not assigned to AFRL Det/Site SE.

**13.3.5.9.2. chg to 13.3.1.4. (Added\*)**

**13.3.5.9.3. chg to 13.3.1.5. (Added\*)**

**13.3.5.9.4. Deleted**

#### **13.3.5.9.5. chg to 13.3.1.6. (Added\*)**

**13.3.5.11. (New) (Added\*)** Review the AFRL Lessons Learned from Science and Technology Advanced Research (ALLSTAR) database (located on SharePoint at <https://cs2.eis.afmc.af.mil/sites/1547/ALLSTAR>) prior to commencing an activity and regularly during an activity. ALLSTAR user instructions are available at the site.

**13.3.5.12. (New) (Added\*)** Submit at least one lesson learned (using AFRL Form 20, *Lessons Learned* or ALLSTAR system, as warranted) by project close out. A lesson learned is any element of knowledge that might assist a future AFRL PM or researcher in successful project completion. This could be a best practice or something that “went wrong” such as a mishap. The goal is to learn methods of conducting activities more efficiently, effectively, and safely.

**13.3.5.13. (New) (Added\*)** Contact AFRL Det/Site SE for assistance in assessing predicted hazard control effectiveness.

**13.3.6.1. chg to 13.3.5.1. (\*)** Ensure AFRL Det/Site SE is included early in system development and activity planning.

**13.3.6.5. chg to 13.3.5.6. (Added\*)** Submit a completed AFRL Form 4 to AFRL Det/Site SE prior to the start of an activity to ensure safety requirements are identified and efficiently integrated into execution. Contact the AFRL Det/Site SSM for assistance to complete the AFRL Form 4. Note: Leadership coordination on the AFRL Form 4 is different than the TAA required for a safety review.

**13.3.6.5.1.** Deleted

**13.3.6.5.2. chg to 13.5.1.1.2. (Added\*)** AFRL Form 4 provides a projected risk based on an initial safety assessment. Leadership coordination is required based on the overall projected risk: TD/711 HPW director for high risk, division chief for medium risk, and branch chief for low risk. **Note:** Leadership coordination on AFRL Form 4 is different than the TAA required for a safety review.

**13.3.6.5.3. chg to 13.5.1.1.3. (Added\*)** The SSM may determine a project is exempt from AFRL Form 4 leadership coordination **if it poses minimal safety risk**. Example criteria for granting this exemption include: (1) There is no hardware or software deliverable or development, (2) The activity does not meet the definition of “Human Subjects Research” per AFRLI 61-103, Vol 2, *AFRL Test Activity Involving Human Participants*, (3) The activity does not involve flight, and (4) No government personnel, equipment, or facilities are involved in the research activity. Exemption is noted by selecting “N/A” as the estimated risk level.

**13.3.6.6. chg to 13.3.5.7. (Added\*)** Participate in a safety review as defined by this chapter.

**13.3.7. and 13.3.9. chg to 13.3.3. (\*)** AFRL TD/711 HPW Directors and Detachment Commanders will:

**13.3.7.1.** Deleted

**13.3.7.2. and 13.3.9.2. chg to 13.3.3.4. (Added\*)** AFRL TD/711 HPW Directors and Detachment Commanders ensure local safety review processes and procedures are established and published. These procedures must define when an SRB is required and the SRB member qualifications. The procedures must define a review process if an SRB is not required. Finally, the procedures must define the local activity approval process.

**13.3.7.3. and 13.3.9.4. chg to 13.3.3.5. (Added\*)** AFRL TD/711 HPW Directors and Detachment Commanders coordinate on high risk AFRL review packages prior to presentation to the AFRL/CC.

**13.3.7.4. chg to 13.3.3.3.1. (Added\*)** Detachment Commanders develop procedures to communicate risk, associated with AFRL activities, to host air base wing commanders for situational awareness.

**13.3.8. chg to 13.3.4. (\*)** For the purposes of this chapter, the AFRL Det/Site SE Office will serve as the Test Organization Safety Office.

**13.3.8.1. chg to 13.3.4.2. (\*)** In cooperation with TD/Wing test leads, develop specific safety review and approval processes and procedures tailored to their unique activities and operating environments. These local processes and procedures will be published in local operating instructions after approval by the commander or director (as applicable), and AFRL/SE. These procedures must define when an SRB is required and the SRB member qualifications. The procedures must define a review process if an SRB is not required. Finally the procedures must define the local activity approval process.

**13.3.8.2. and 13.3.8.3. chg to 13.3.4.6. (\*)** Inform HQ AFRL/DO/SE on high risk AFRL activities as early as possible. Coordinate on high risk AFRL activity review packages prior to presentation to the AFRL/CC.

(Note: this is also listed at 13.3.8.2.) **13.3.8.3. and 13.3.8.2. chg to 13.3.4.6. (\*)** Inform HQ AFRL/DO/SE on high risk AFRL activities as early as possible. Coordinate on high risk AFRL activity review packages prior to presentation to the AFRL/CC.

**13.3.8.4.** Deleted

**13.3.8.5. chg to 13.3.4.4. (\*)** Act as or designate in writing the SRB chairperson. AFRL/DO review and HQ AFRL/SE approval is required if the designated SRB chairperson is not assigned to AFRL Safety. Nominate SRB chairperson candidates who are not assigned to an AFRL SE office. Forward nomination to AFRL/DO for coordination and AFRL/SE for final approval.

**13.3.8.6.** Deleted

**13.3.8.7. chg to 13.3.4.7. (\*)**

**13.3.8.8. chg to 13.3.4.8. (Added\*)**

**13.3.8.9. chg to 13.3.4.9. (Added\*)**

(Note: this is also listed at 13.3.7.) **13.3.9 and 13.3.7. chg to 13.3.3. (\*)** AFRL TD/711 HPW Directors and Detachment Commanders will:

**13.3.9.1. chg to 13.3.3.1. (\*)** AFRL TD/711 HPW Directors ensure compliance with the safety process defined in this instruction.

(Note: this is also listed at 13.3.7.2.) **13.3.9.2. and 13.3.7.2. chg to 13.3.3.4. (Added\*)** AFRL TD/711 HPW Directors and Detachment Commanders ensure local safety review processes and procedures are established and published. These procedures must define when an SRB is required and the SRB member qualifications. The procedures must define a review process if an SRB is not required. Finally, the procedures must define the local activity approval process.

**13.3.9.2.1.** Deleted

**13.3.9.2.2.** Deleted

**13.3.9.2.3.** Deleted

**13.3.9.3. chg to 13.3.3.6. (Added\*)** AFRL TD/711 HPW Directors act as or designate in writing, the TAA for execution of Medium- and Low-risk activities.

(Note: this is also listed at 13.3.7.3.) **13.3.9.4. and 13.3.7.3. chg to 13.3.3.5. (Added\*)** AFRL TD/711 HPW Directors and Detachment Commanders coordinate on high risk AFRL review packages prior to presentation to the AFRL/CC.

**13.3.9.5.** Deleted

**13.3.10.** Deleted

**13.3.10.1.** Deleted

**13.3.10.2.** Deleted

**13.3.11.** Deleted

**13.3.11.1.** Deleted

**13.3.12. chg to 13.3.5. (\*)** This section applies to AFRL PM, Test Managers, engineers, scientists, researchers, or any AFRL person planning or conducting activities.

**13.3.12.1. chg to 13.3.5.8. (Added\*)** Not conduct any activity unless it is documented in a plan that has been through technical and safety reviews and approved by the appropriate TAA. This includes operations in facilities with an expired AFRL Form 5.

**13.3.12.2. chg to 13.3.5.9. (Added\*)** Ensure convening authority, mishap investigation, mishap liability and accountability, and reporting responsibilities are established and documented in the activity plan. Report all mishaps to AFRL Det/Site SE IAW this instruction, AFRL Form 29, *AFRL Test Safety Mishap Worksheet*, AFI 91-204, *Investigating and Reporting US Air Force Mishaps*, to include supplements, and locally developed procedures.

**13.3.12.3.** Deleted

**13.3.12.4. chg to 13.3.5.10. (Added\*)** Ensure contracts include requirements for the contractor to provide an acceptable activity plan and to support the government technical and safety review processes.

**13.5.1. (New) (\*)** AFRL System Safety Analysis Tools for Test Safety Planning:

**13.5.1.1. (New) (Added\*)** AFRL Form 4. System Safety is most effective when applied at the very beginning of a project, and throughout as follows: AFRL Form 4 is required for every AFRL activity prior to any contracting actions. It must be routed through the Directorate Test Lead and AFRL/DO for review for flight activities. It will be re-accomplished when the activity has significant changes or when new research, contractors or different activities are introduced. (For example: An initial Form 4 is completed for a test plan with several stages of ground only activities, then a stage is modified to include flight activities, the test plan would then require a new Form 4.)

**(New) (Added\*)** Note: AFRL Form 4 is first and foremost a mechanism to guide project teams' planning to ensure they consider potential hazards and assess the risks of those hazards. It is recognized that the final manifestation of the project may differ significantly from the initial expectation as the systems engineering and planning process progresses.

**13.5.1.1.3.1. (New) (Added\*)** A grant, since it should by definition produce no tangible deliverable back to the government and presents no risk to AFRL personnel, facilities, or equipment, does not require the completion of an AFRL Form 4. However, if at any time a deliverable is planned or presented, or AFRL personnel or assets are used in the course of the grant, this statement of exemption is null and void.

**13.5.1.2. (New) (Added\*)** AFRL Form 5. Clear identification and communication of hazards in AFRL facilities is a key component of protecting personnel, facilities and equipment. An approved AFRL Form 5 is required prior to conduct of any activity in an AFRL facility or where AFRL personnel and or resources are at risk.

**(New) (Added\*)** Note: AFRL Form 5 is intended to provide a quick summary of hazards for personnel, leadership, visitors and emergency personnel prior to facility entry. The system

analysis applies to clearly defined system boundaries also known as the “envelope of operations” or system scope.

**13.5.1.2.1. (New) (Added\*)** AFRL/RQ Form 27, *Test Safety Permit*, is an approved alternate to AFRL Form 5. Other alternate form approval may be granted by AFRL/SE.

**13.5.1.2.3. (New) (Added\*)** Safety permits will be re-accomplished prior to permit expiration. Low-risk permits reviewed every two years, medium-risk one year, and high-risk every six months. The frequency of review may be increased at the discretion of AFRL Det/Site SE. Any changes in the current hazards or introduction of new hazards require a permit review. The activity will not start or continue if Form 5 is not current.

**13.5.1.2.3.1. (New) (Added\*)** AFRL Form 5 is considered complete and valid only when the AFRL Det/Site SE and the TAA have signed the form either digitally or with a “wet” signature.

**13.5.1.2.3.2. (New) (Added\*)** All activities conducted in a laboratory or facility for which a completed AFRL Form 5 documents the safety review, may be conducted without further review if the activities are within the normal operating conditions approved on the AFRL Form 5.

**13.5.1.2.4. (New) (Added\*)** TAA signature guidance follows 13.7.1.

**13.5.1.3. (New) (Added\*)** AFRL Form 19A. For AFRL activities subject to safety review that do not take place in an AFRL facility, AFRL Form 19A is required. Like AFRL Form 5, the system analysis applies to clearly defined system boundaries – also known as the “envelope of operations” or system scope.

**13.5.1.3.1. (New) (Added\*)** For non-flight activities, AFRL RQ Form 27 is an approved alternate to AFRL Form 19A. Other alternate form approval may be granted by AFRL/SE.

**13.5.3.5.** Deleted

**13.5.3.6.** Deleted

**13.5.4. (New) (\*)** Due to the scale of projects within AFRL, the safety plan documentation may be either: 1) An annex to the test plan; 2) Integrated with the test plan itself; or 3) Kept with AFRL Form 5 (or alternate). The appropriate form of the safety plan is determined by the SSM based on local needs and project details.

**13.5.4.6.** Deleted

**13.6.1. (Chg\*) (\*)** Safety Review: The PM will contact AFRL Det/Site SE to coordinate a safety review. The safety review will be objective, independent, and unbiased. The intent is to ensure hazards are identified, appropriate risk controls are applied, and residual risk is clearly communicated for decision by the appropriate TAA. Safety reviews conducted by other organizations using published review procedures, may be accepted at the discretion of AFRL Det/Site SE, AFRL/SE, and the TAA.

**13.6.2. (Chg\*) (\*)** The safety review will be conducted by either AFRL Det/Site SE, an individual designated by AFRL Det/Site SE, or by an SRB.

**13.6.2.1.1. and 13.6.2.1.1.1. chg to 13.6.2.1.1. (\*)** AFRL Det/Site SE will either act as the SRB chairperson or designate one in writing. AFRL/SE is the approval authority for SRB chairperson candidates who are not assigned to AFRL Det/Site SE. The SRB chairperson is responsible for conducting the SRB. If any SRB members or required personnel are not present, the SRB may be postponed at the discretion of the chairperson.

**13.6.2.1.1.2.** Deleted

**13.6.2.2. chg to 13.6.2.1.2. (\*)** AFRL Det/Site SE or designate will review the activity plan to ensure hazards are identified and appropriate controls have been developed. AFRL Det/Site SE or designate will approve the safety aspects of the plan and determine risk levels for specific efforts as well as the overall activity plan.

**13.6.3.** Unchanged

**13.6.3.1.** Unchanged

**13.6.3.1.1.** Unchanged

**13.7.1. (Chg\*) (\*)** Research/Test Coordination and Approval: The TAA is the individual responsible for accepting the results of the technical and safety reviews and approving the activity to proceed. The TAA will base their decision on the contents of the activity approval package and recommendations made by the technical and safety reviewers. AFRL TAA: Designation of approval authority is driven by residual risk. **NOTE:** TAA is part of the safety review process and differs from the coordination required by AFRL Form 4 addressing a projected risk based on an initial safety assessment.

**13.7.2. (Chg\*) (\*)** At minimum, the activity approval package will contain the technical and safety review documentation. AFRL Det/Site SE will develop more specific approval package safety requirements if necessary.

**13.7.2.1.** Unchanged

**13.7.2.1.1.** Unchanged

**13.7.2.1.2.** Unchanged

**13.7.2.1.3.** Unchanged

**13.7.4.1.** Deleted

**13.7.4.2.** Deleted



#### **13.7.4.2.1. Unchanged**

**13.7.4.3. chg to 13.7.1.2. (\*)** TD/711 HPW Directors will act as, or designate in writing, the TAA for medium and low risk activities. Minimum TAA levels are:

**13.7.4.3.1. chg to 13.7.1.2.1. (Added\*)** Medium risk “non-flight activity” delegation will be no lower than TD/HPW division chief (minimum 0-6 or civilian equivalent). Medium risk “flight activity” delegation will be no lower than TD/711 HPW Director’s deputy or Associate Director.

**13.7.4.3.2. chg to 13.7.1.2.2. (Added\*)** Low risk “non-flight activity” delegation will be no lower than the branch chief (Squadron CC equivalent). Low risk “flight activity” delegation will be no lower than TD/711 HPW division chief.

**13.8.3. (New) (\*)** Resumption of testing will be based on finding of the mishap cause(s), mitigations taken and concurrence by the SRB chair and AFRL/SE.

**13.9.3. chg to 13.9.2. (Added\*)** PMs will contact AFRL Det/Site SE or the SRB chairperson if changes to activity plans are required after approval has been granted. AFRL Det/Site SE or the SRB chairperson will evaluate the safety impacts of the proposed change and determine required action. Actions may vary from no action, safety plan amendments, and/or re-accomplishing the safety review. AFRL Det/Site SE will establish amendment procedures to accommodate activity plan changes.

**13.9.4. chg to 13.9.3. (Added\*)** AFRL Det/Site SE will specify the maximum number of amendments/revisions allowed to an activity plan before it must be completely rewritten.

**13.10.1. Deleted**

**13.11.1. Deleted**

**13.12.10. Deleted**

**13.13. chg to 13.13.2. (Added\*)** AFRL Mishap Reporting. AFRL Det/Site SE or the SRB chairperson will ensure test plans contain mishap reporting procedures and applicable reporting timelines IAW this instruction, AFI 91-204, AFMC Sup, *Safety Investigations and Reports* and local written procedures. The PM will ensure all involved personnel clearly understand their mishap response, investigating, and reporting roles and responsibilities prior to the start of an activity.

**13.13.3. (New) (Added\*)** AFRL Mishap Notification Procedures:

**13.13.3.1. (New) (Added\*)** In the event of a mishap, members of the test team will initiate mishap response procedures as defined in the test plan. After the initial response is complete and the situation is stabilized, test team members will initiate mishap-notification procedures

according to the test plan and complete AFRL Form 29 and contact AFRL supporting Det/Site SE Office. AFRL/SE must be notified within eight hours of a mishap.

**13.13.3.2. (New) (Added\*)** Det/Site SE Offices will make initial determination of mishap status and classification. Use AFRL Form 29 to ensure proper notifications are made.

**13.13.3.2.1. (New) (Added\*)** AFRL Det/Site SE: will notify AFRL/SE as soon as possible but no later than eight hours following a mishap for all flight and weapons events/mishaps, regardless of class, and all occupational mishaps class C or higher. AFRL/SE will make final determination of mishap status and classification.